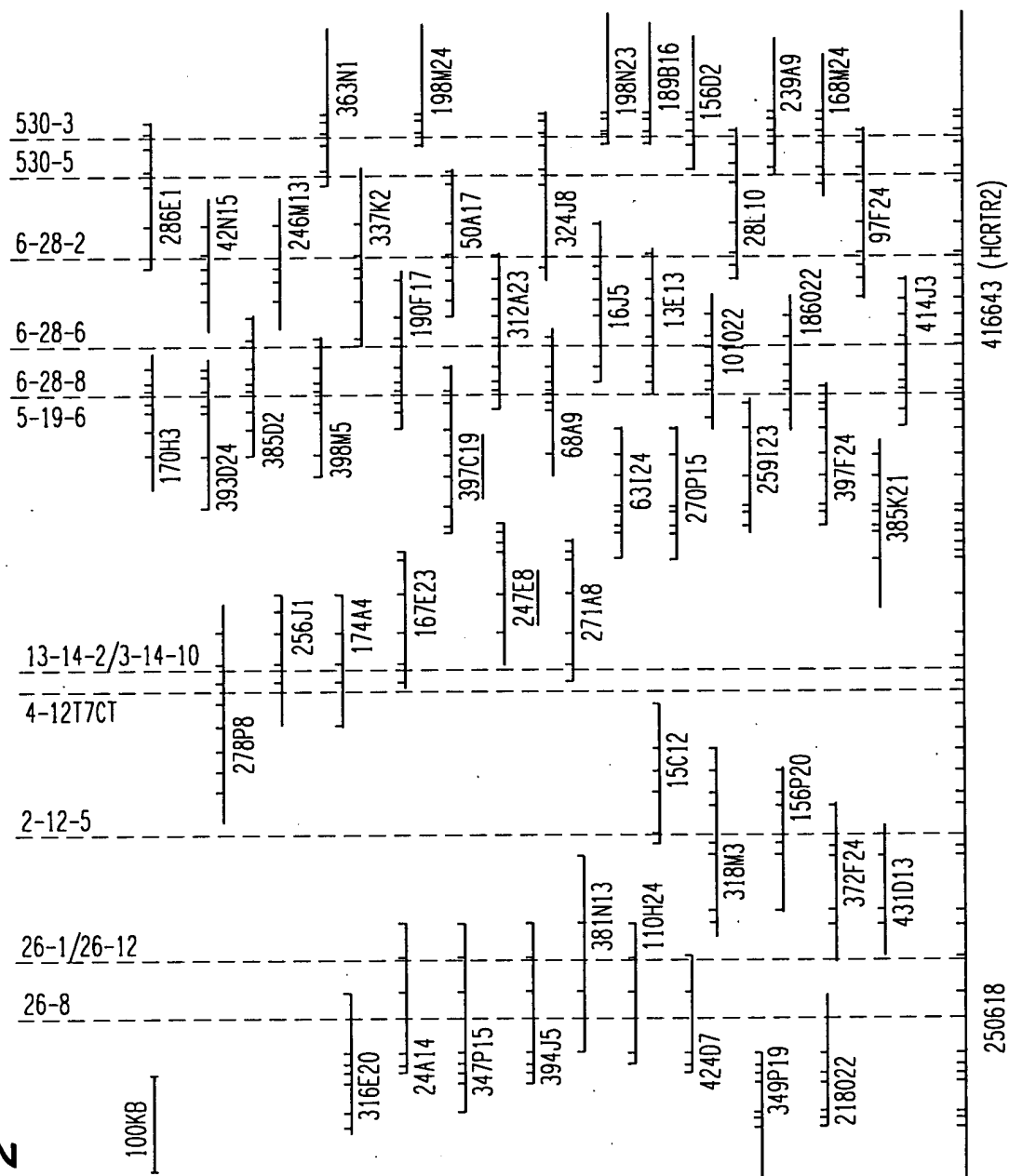


FIG. 2



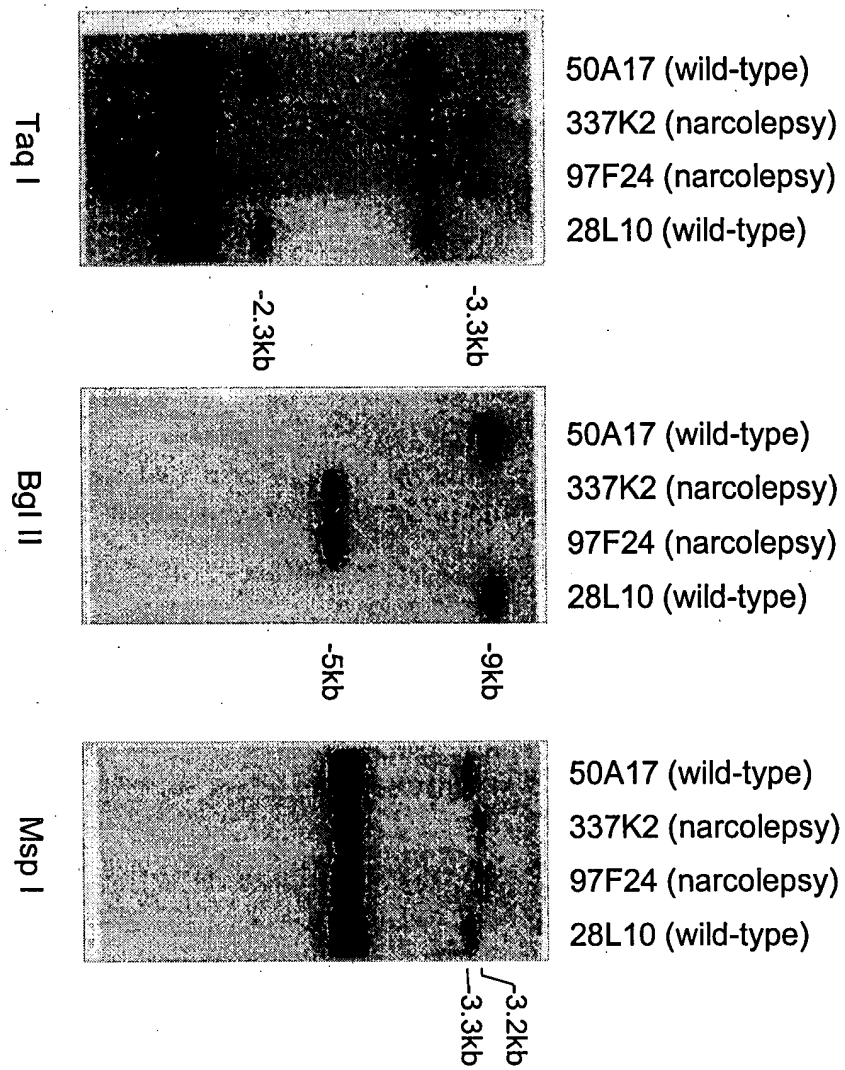


FIG. 3

FIG. 4A

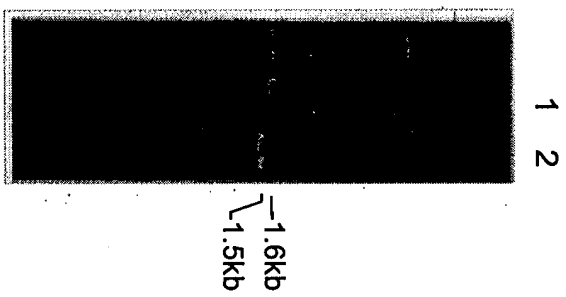


FIG. 4B

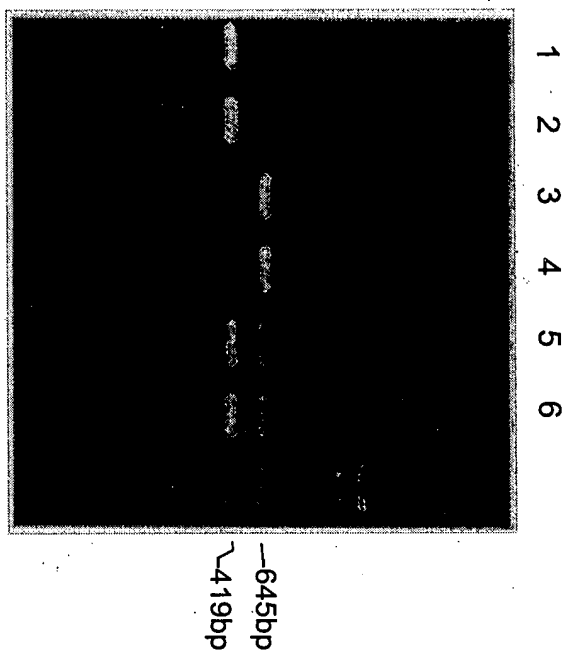


FIG. 4C

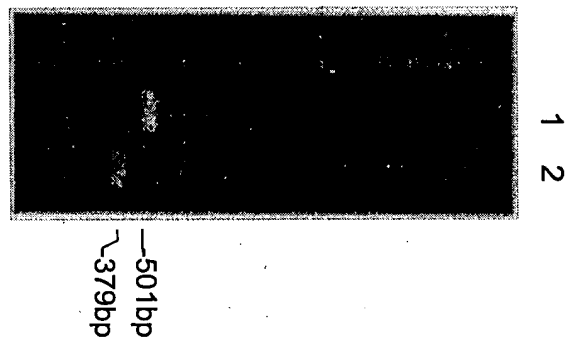


FIG. 5

Hcr tr2 (dog)	1	MSGTKLEDSPPCRNWSSAPELNETQEPFLNPTDYDDEEFLRYLWREYLHP	50
HCRTR2 (human)	1	MSGTKLEDSPPCRNWSSASELNETQEPFLNPTDYDDEEFLRYLWREYLHP	50
Hcr tr2 (rat)	1	MSSTKLEDSPPCRNWSSASELNETQEPFLNPTDYDDEEFLRYLWREYLEP	50
Hcr tr2 (narc/Lab.)	1	MSGTKLEDSPPCRNWSSAPELNETQEPFLNPTDYDDEEFLRYLWREYLHP	50
Hcr tr2 (narc/Dob.)	1	MSGTKLEDSPPCRNWSSAPELNETQEPFLNPTDYDDEEFLRYLWREYLHP	50
<div style="text-align: center;"> <div style="display: inline-block; width: 150px; border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="display: inline-block; width: 150px; border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="display: inline-block; width: 150px; border-bottom: 1px solid black; margin-bottom: 5px;"></div> </div> <div style="display: flex; justify-content: space-around; font-weight: bold;"> =====TM1===== =====TM2===== </div>			
Hcr tr2 (dog)	51	KEYEWVLIAGYIIIVFVVALVGNVLVCVAVWKNHHMRTVTNYP	100
HCRTR2 (human)	51	KEYEWVLIAGYIIIVFVVALVGNVLVCVAVWKNHHMRTVTNYP	100
Hcr tr2 (rat)	51	KEYEWVLIAGYIIIVFVVALVGNVLVCVAVWKNHHMRTVTNYP	100
Hcr tr2 (narc/Lab.)	51	KEYEWVLIAGYIIIVFVVALVGNVLVCVAVWKNHHMRTVTNYP	100
Hcr tr2 (narc/Dob.)	51	KEYEWVLIAGYIIIVFVVALVGNVLVCVAVWKNHHMRTVTNYP	100
<div style="text-align: center;"> <div style="display: inline-block; width: 150px; border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="display: inline-block; width: 150px; border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="display: inline-block; width: 150px; border-bottom: 1px solid black; margin-bottom: 5px;"></div> </div> <div style="display: flex; justify-content: space-around; font-weight: bold;"> ===== =====TM3===== </div>			
Hcr tr2 (dog)	101	VLVTIITCLPATLVVDITETWFFGQSLCKVIPYLQTVSVSVSLTSCIAL	150
HCRTR2 (human)	101	VLVTIITCLPATLVVDITETWFFGQSLCKVIPYLQTVSVSVSLTSCIAL	150
Hcr tr2 (rat)	101	VLVTIITCLPATLVVDITETWFFGQSLCKVIPYLQTVSVSVSLTSCIAL	150
Hcr tr2 (narc/Lab.)	101	VLVTIITCLPATLVVDITETWFFGQSLCKVIPYLQTVSVSVSLTSCIAL	150
Hcr tr2 (narc/Dob.)	101	VLVTIITCLPATLVVDITETWFFGQSLCKVIPYLQTVSVSVSLTSCIAL	150

FIG. 5 (continued)

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=====TM4=====
Hcr tr2 (dog)      151 DRWYAICHPLMFKSTAKRARNISV I I W I V S C I I M I P Q A I V M Z C S T M L P G L 200
HCRTR2 (human)    151 DRWYAICHPLMFKSTAKRARNISV I I W I V S C I I M I P Q A I V M E C S T V F P G L 200
Hcr tr2 (rat)     151 DRWYAICHPLMFKSTAKRARNISV I I W I V S C I I M I P Q A I V M E R S S M L P G L 200
Hcr tr2 (narc/Lab.) 151 DRWYAICHPLMFKSTAKRARNISV I I W I V S C I I M I P Q A I V M E C S T M L P G L 200
Hcr tr2 (narc/Dob.) 151 DRWYAICHPLMFKSTAKRARNISV I I W I V S C I I M I P Q A I V M B C S T M L P G L 200

=====TM5=====
Hcr tr2 (dog)      201 ANKTTLFTVCDERWGGE I Y P K M Y H I C F F L V T Y M A P L C L M V L A Y L Q I F R K L 250
HCRTR2 (human)    201 ANKTTLFTVCDERWGGE I Y P K M Y H I C F F L V T Y M A P L C L M V L A Y L Q I F R K L 250
Hcr tr2 (rat)     201 ANKTTLFTVCDERWGGE V Y P K M Y H I C F F L V T Y M A P L C L M V L A Y L Q I F R K L 250
Hcr tr2 (narc/Lab.) 201 ANKTTLFTVCDERWGGE I Y P K M Y H I C F F L V T Y M A P L C L M V L A Y L Q I F R K L 250
Hcr tr2 (narc/Dob.) 201 ANKTTLFTVCDERWGDPWNI I C S S E K M E A P A A C F T A S R A R T A D Q V Q D 247
                               (SEQ ID NO: 11)

Hcr tr2 (dog)      251 WCRQIPGTSSVVQRKWKPLQPASQPRGPGQQT K S R I S A V A A E I K Q I R R R 300
HCRTR2 (human)    251 WCRQIPGTSSVVQRKWKPLQPVSQPRGPGQQT K S R M S A V A A E I K Q I R R R 300
Hcr tr2 (rat)     251 WCRQIPGTSSVVQRKWKQPVSQPRGSGQQSKAR I S A V A A E I K Q I R R R 300
Hcr tr2 (narc/Lab.) 251 WCRQIPGTSSVVQRKWKQLQPASQPRGPGQQT K S R I S A V A A E I K Q I R R R 300

```

FIG. 5 (continued)

		=====TM6=====	=====
Hcr tr2 (dog)	301	KTARMLMVVLLVFAICYLPISILNVLKRVFGMFTHTEDRETGYAWFTFSH	350
HCRTR2 (human)	301	KTARMLMVVLLVFAICYLPISILNVLKRVFGMFAHTEDRETGYAWFTFSH	350
Hcr tr2 (rat)	301	KTARMLMVVLLVFAICYLPISILNVLKRVFGMFTHTEDRETGYAWFTFSH	350
Hcr tr2 (narc/Lab.)	301	KTARMLMVVLLVFAICYLPISILNVLKRKV (SEQ ID NO:10)	330
		=====	
		==TM7==	
Hcr tr2 (dog)	351	WL VYANSAANP I IYNFLSGKFREEFKAAFSCCCLGVHHRQEDRLTRGRTS	400
HCRTR2 (human)	351	WL VYANSAANP I IYNFLSGKFREEFKAAFSCCCLGVHHRQEDRLTRGRTS	400
Hcr tr2 (rat)	351	WL VYANSAANP I IYNFLSGKFREEFKAAFSCC-LGVHRRQGDRLARGRTS	399
Hcr tr2 (dog)	401	TESRKSLTTQISNFDNVSKLSEQVVLTSISTLPAANGAGPLQNW (SEQ ID NO:7)	
HCRTR2 (human)	401	TESRKSLTTQISNFDNISKLSEQVVLTSISTLPAANGAGPLQNW (SEQ ID NO: 8)	
Hcr tr2 (rat)	400	TESRKSLTTQISNFDNVSKLSEHVALTSISTLPAANGAGPLQNWYLQQGV	449
Rcr tr2 (rat)	450	PSSLLSTWLEV	460

FIG. 6

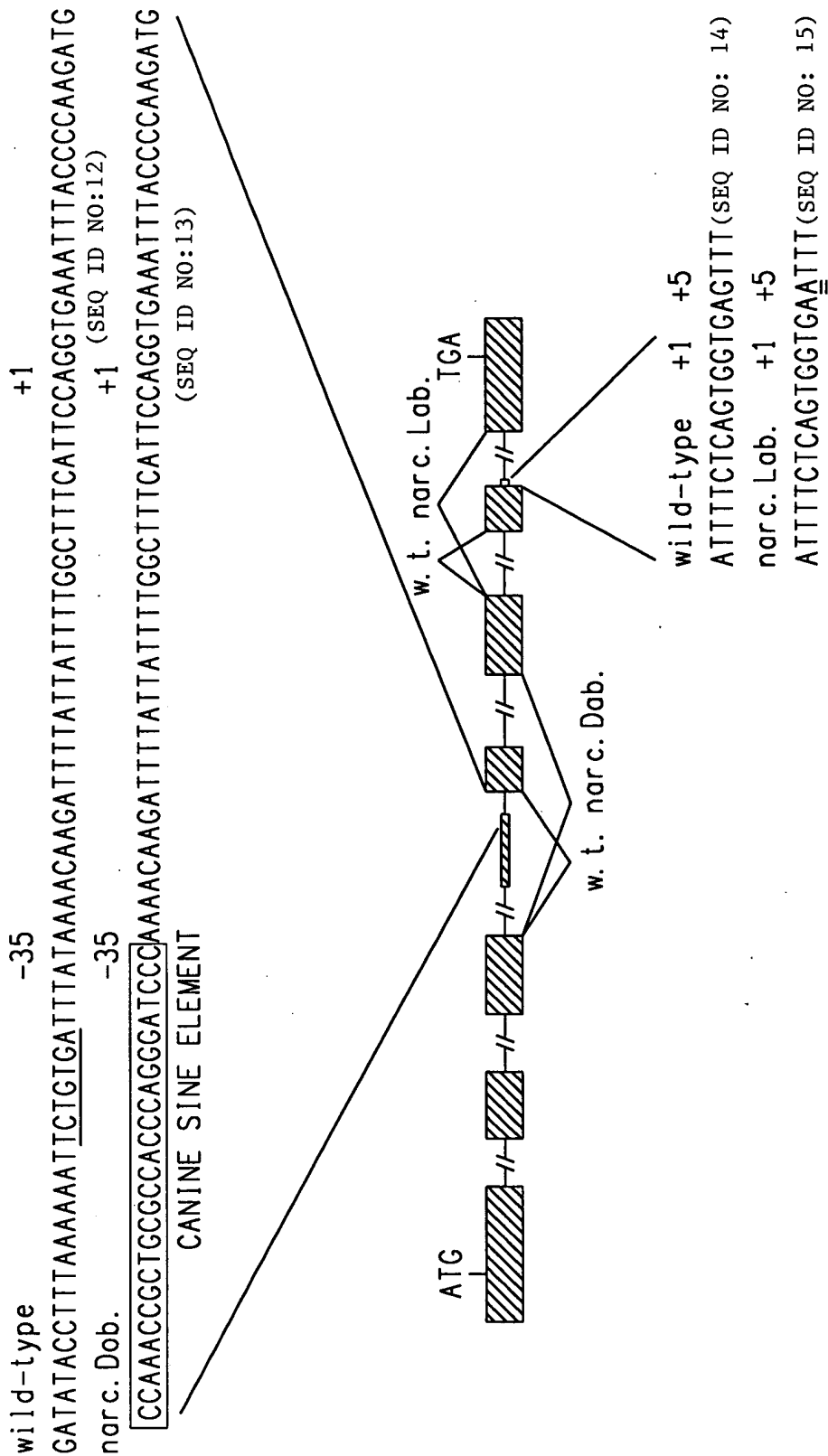


Fig. 7

HCRT Polymorphisms:

Exon 1

TTGTCTGGCCTGGGTGTGACGCAAGTGCCTGTCAATTCCCGCCACCTCAGAGCACTATAACCCAGACCCCTGGGAGTGGG
TCACAATTGACAGCCTCAAGGTTCCCTGGCTTTTGAACCAACACAGACATCTCCTTTCCCGGTACCC(C/A)¹ACCTGAGCG
CCAGACACCATGAACCTTCTCCACAAAGTAAAGATCCAGGATGGAGGGTGACTCACCATCCCAAGAGCAAAAA

¹20 C->A (non coding) (SEQ ID NO: 16)

Exon 2

GGCGGGCGCCGTGGGAAGACCCCCCAGCGCCCTGTCTCCGTCTCCCTAGGTCTCCTGGGCGCCGTGACGCTAC(T/G)²GCTG
CTGTGTGTGCTGCCGCCCGGCTGTGTCTCGTCCGGGGGGCTGCACAGCCCTGCCGACTGTCTCGTCAAAAGACT
TGCTCTTGCCGCCCTACGAGCTGTGACGGCGGGGCAATCAGCGGCCGCATCCTCAGCTGGGCAAGCGGAGGTC
CGGGCCCCCGGCCCTCCAGGTCGGCTGCAGGCCCTCCTGAGGCCAGCGGCAACACGCGCGGGCATCCTGACCATGG
GCCGCCGCGCAGGCGCAGAGCCAGCGCCGCCCTGCTCGGGCGCGCTGTTCGGCCCGCGCCCTCCGTCGCG
CCCGGAGGACAGTCCGGGATCTGAGTCGTCTTCGGGCCCTGTCTGGCCAGGCCCTTGCCCTTGCCCAACCCAGCGTCA
GCCCCAGAAAAAGGCAATAAAGACGAGTCTCCATTGCTGCTGTCTGTGCGGTGCGCTGCCCCATCCGG
GGTGGCA

²47 T->G (Leu16Arg) (SEQ ID NO: 17)

Fig. 8A

HCRTR1 Polymorphisms:

Exon 1

AATCCCTAATGTTTCTCCTTCTCTCTTCTTCCCACTCCCTCCTTCTCTCTCCTTCAGGAAGTTTGAGGCTGAGACCCGAAA
AGACCTGGGTGCAAGCCTCCAGGCAACCTGAAGGAGTGGGCTGAGGGCTGGCCCAAGCTCCCTCTCTCTCTCTCTGTAGAG
CCTAGGATGCCCTCTGTGTCAGCGGCTCTGAGCTCATGGAGCCCTCAGCCACCCAGGGGCCAGATGGGGTCCCCC
TGGCAGCAGAGAGCCGTCCCTGTGCCCTCCAGACTATGAAGATGAGTTTCTCCGCTATCTGTGGCG(C/T)'GATTATCTGTAC
CCAAACAGTATGAGTGGTCCCTCATCGCAGCCTATGTGGCTGTGTCGTGGCCCTGGTGGGCAACACGCTGGGTAGG
TCCAGGGCTTGCCCGGCAAGTGTGCCGGCTTCCCTGGGATTGA

¹¹¹ T->C (synonymous) (SEQ ID NO: 18)

Exon 2

CTAGGATGGGTGGTCTGCCACCAAGCTTCACTCGCTGCCCTGCAGTCTGCCCTGGCCGTGTGGGGAACCAACCATGA
GGACAGTCACCAACTACTTTCATTTGTCACCTGTCCCTGGCTGACGTTCTGTGACTGCTATCTGCCCTGCCGGCCAGCCTGCT
GGTGGACATCACTAGTCTGTGGCTGTTCGGCCATGCCCTCTGCAAGGTCATCCCCCTATCTACAGGTGAGCTCTGCCCAAGGCA
CCCCTCACCACTCCTTGTACAGCCTGTAAAAA (SEQ ID NO: 19)

Exon 3

CATCGCTGGGTGGCCCCCAAAATGACCGACGTTGTGTCCCGTGGGGCAGGCTGTGTCCGTGTCAAGTGGCAGTGCTAACTCTC
AGCTTCATCGCCCTGGACCGCTGGTATGCCATCTGCCACCCACTATTGTTCAAGAGCACAGCCCGGGCCCGGTGGCTCC
ATCCTGGGCATCTGGGCTGTGTCTGCTGGCCATCATGGTCCCGCAGGCTGCAGTCAATGCAAGCAGTGCTGCTGCCCTGAG
CTAGCCAACCGCACAGGCTCTTCTCAGTCTGTGATGAACGCTGGGCAGGTAATGGTGGAAGCCTCAAGCAGGCATCCCCCTC
AGGTGGCACTTTGGGA (SEQ ID NO: 20)

Exon 4

GGGTGGGGCTCACGGATTGGGCCCTGACTCTGCACTCTTGACCCCTGCAGATGACCTCTATCCCAAGATCTACCAAGTTGCTT
CTTTATTGTCACTACCTGGCCCCCACTGGGCCCTCATGGCCATGGCCTATTTCAGATATTCCGCAAGCTCTGGGGCCGCCAG
GTGAGGCCCACTCTGGGCAGGGGCTAGGCCAGTCACTGTGTGGGCTGGG (SEQ ID NO: 21)

Fig. 8B

Exon 5

CACCTCCCAAGTGCTGTACCCACCACTGCTGTCTCTATGTGTGGACAGATCCCCGGCACCACCTCAGCACTGGTGCGGA
ACTGGAAGGCCCTCAGACCAG(C/A)²TGGGGGACCTGGAGCAGGGCCTGAGTGAGAGCCCCAGCCCCGGCCCC(G/A)³C
GCCTTCCTGGCTGAAGTGAAGCAGATGCCGTGCACGGAGGAAGACAGCCAAAGATGCTGATGGTGCTGCTGCTTCGCC
CTCTGCTACCTGCCCATCAGCGTCTCAATGTCTTAAAGAGGTGAGACGGGGTATGGTTGGGGTGGGAGAAAGTTTGAGG
TTGGGGAAG

²793 C->A (Leu265Met); ³842 G->A (Arg281His) (SEQ ID NO: 22)

Exon 6

CATGCATACGACGCTACCCCAATTCTGACGCTCCTCCACCCCTGGGCCCTAGGGTGTTCGGGGATGTTCGGCCCAAGCCAGTGACCCG
GAAGCTGTCTACGCCCTGCTTCACTTCTCCACTTCTCCACTGGCTGTGTACGCCAACAGCGCTGCCAACCCCATCATCTACAACTTCC
TCAGTGTGAG(C/T)⁴AGGCTGGGGATGC AAAATGACTGAGGGTGGCCAAACAGTCCACAT ⁴IVS6 +6C->T (non coding)
(SEQ ID NO: 23)

Exon 7

TCCTGCTGCATCTGTCTCCTTATGGCTGTGTCTTTTGTCTCCCAACCAAGGCAAAATCCGGGAGCAGTTTAAAGGCTGCCCTTCTCC
TGCTGCCCTGCCCTGGGTCCCTGGGCTCTCTGAAGGCCCTAGTCCCGCTCTCTGCCAGCCACAAAGTCCCTTGTTCC
TTGCAGAGCCGATGCTCC(G/A)⁵TCTCCAAATCTCTGAGCATGTGTGTCTACCCAGCGTCAACACAGTGTGCCCTGAGCG
AGGGTGCCCTGGAGGGTCCGGGTCTGGGGGATCTGCCCCCTACCCCTCATGGAAAGACAGCTGGATGTGGTGAAGGCTGT
GGCTTCAGTCCCTGGGTTTCTGCTGTGACTCTGGATAAGTCACTTCT⁵1222 G->A (Val408Ile) (SEQ ID NO: 24)

Fig. 9A

HCRTR2 Polymorphisms:

Exon 1

TCAGCGAGGAGGCTGTGGGCTGCGGACTGAGTGTGGAATGAGGAGTAATTGAGCTTCAGCTGAGCCGGAGCGTAGCTTT
CTCCTCCTGGTGTCAATTGCTGACCTCCAGTGCCGGTCCCTAGTTCCTCAGCTGCCCTATCTTCCCGGTGCAACATCGCCT
GTAAGACAGCAAAGCCACCGCAGAGTTGCCCGCAGAAAGACTCCGGAGGCATTGGCTCAGTAACTTTTCACGTCATTTT
CTGCTCGGAGCCCTTCTAGCCTCTCCGCGAGCCTTTCCACCGCAAATCACCAAGTGTCTATGGGGCAGCGGAGAGGA
GCTTGACGCAATTGAGCGGAACCGGACTTGAGCCCGTGTATGTCCGGCACCAAAATTGGAGGACTCC(C/T)¹CC(C/A)²CTTGTCG
CAACTGGTCACTCTGCTTCGGAGCTGAATGAACTCAAGAGCCCTTTTAAACCCACCGACTATGACGACGAGGAATTCCTG
CGGTACCTGTGGAGGGAATACCTGACCCGAAAGAAATAGTGGTCTGATCGCGGGTACATCATCGTGTTCGTCGTG
GCTCTCATTTGGGAACGTCCCTGGGTGAGTCTCTCCGGGACGCCCTCTAGGGGCTATCACCCCTCTCCG ¹28 C->T
(Pro10Ser); ²31 C->A (Pro11Thr) (SEQ ID NO: 25)

Exon 2

CAATACCTATTTTCTTTGTGAGTG(A/C)³CTATTCTCTTTTCTTTTCAAAATTAGTTGTGTGGCAGTGTGGAAGAACCCACAT
GAGGACGGTAACCAACTACTTCATAGTCAATCTTTCTCTGGCTGATGTGCTCGTGACCATCACCTGCCCTCCAGCCACACTG
GTCGTGGATATCACTGAGACCTGGTTTTTTTGGACAGTCCCTTTGCAAAGTGATTCCTTATCTACAGGTAATTGTTTTTAATGC
TTTTTTGAAGCTACTAAAGAAAGAAATGTTTCAGC(C/T)⁴A ³IVS1 -25A->C (non coding); ⁴IVS2 +49C->T (non coding)
(SEQ ID NO: 26)

Exon 3

TCCTTTAACAGCTGGTCTTCTCTATTACTATGATCTTTCTTTCTCTAGACCGTGTCTGGTGTCTGTCTCTCACTGAG
CTGTATCGCCTTGATCGGTGGTATGCAATCTGTCAACCTTTTGATGTTTAAGACACAGCAAAGCGGGCCCGTAACAGCATT
GTCATCATCTGGATTGTCTCCTGCATTATAATGATTCCTCAGGCCATCGTCATGGAG(T/A)⁵GCAGCACCGTGTCTCCAGGCT
TAGCCAAATAAACCAACCTCTTTACGGTGTGTGATGAGCGCTGGGGTGGTAAGTACCTTATGGCCCATCAACTGACATTTATA
TTACAGCAGCAAAAT ⁵77 T->A (Cys193Ser) (SEQ ID NO: 27)

Exon 4

AAGTCCATCAATTGTAAACGTAAAGGTTTGTGTTTGTGACCTTTCATCCTAGGTGAAATTTATCCCAAGATGTACCACTCTGTTTC
TTTCTGTGACATACATGGCACCACTGTGTCTCATGGTGTGGCTTATCTGCAAAATATTCGCAAAACTCTGGTGTCTGACAGG
TATATAGTTTCAAAATATTTTGGGTGCATTAATCTCCACACATAATTG (SEQ ID NO: 28)

Fig. 9B

Exon 5

GAACCTTTCCTAAGTCAAATTGCAATAAGGGTCTGTCTCTCTCTTCAGATCCCTGGAACATCATCTGTAGTTCAGAGAAAATG
 GAAGCCCCCTGCAGCCTGTTTCACAGCCTCGAGGGCCAGGACAGCAACGAAGTCCCGGATGAGCGCTGTGGCGGCTGAA
 TAAAGCAGATCCGAGCCAGAGAAACAGCCCGGATGTTGATG(G/A)⁶TTGTGCTTTTGGTATTGCA(G/G)⁷ATTGCTATCT
 ACCAATTAGCATCCTCAATGTGCTAAAGAGGTAAACTTATCTGTATTGAAAATGAAATAGCCTGCCCTTTTCTTGATT⁹²² G-
 > A (Val308Ile); ⁷⁹⁴² A->G (Synonymous) (SEQ ID NO: 29)

Exon 6

TTGAAATTTAATTATAAAGACACTTTTCTGTGTTCTTTCTCTGCAGAGTATTGGGATGTTTGCCCATACTGAAGACAGAG
 AGACTGTGTATGCCTGGTTTACCTTTTCACACTGGCTTGATATGCCAATAGTGTGCGAATCCCAATTATTTATAATTTTCTC
 AGTGGTGAGTTTCAACTGTCTCTCCATAAGCCACAAATTGTAAACCAAGGATGAG (SEQ ID NO: 30)

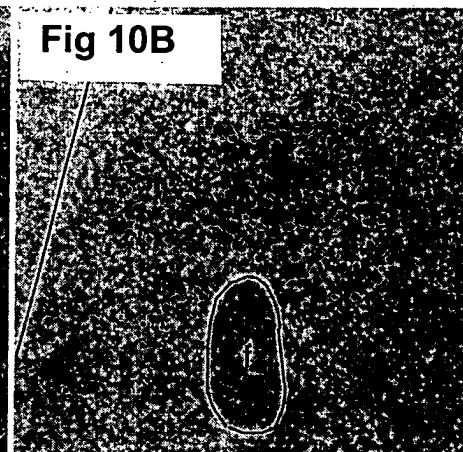
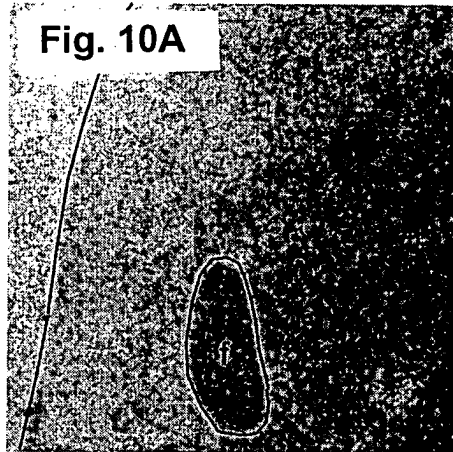
Exon 7

TGAAGCATTTATGTATAATTCTTTTCTCTTTCATTCTCTCTGTGTTGCCAGGAAAATTTTCGAGAGGAATTTAAAGCTGCGTTTCT
 TGCTGTTGCCCTTGAGTTTCAATCCATCGCCAGGAGGATCGGCTCACCAGGGACGAACTAGCA(C/T)⁸AGAGAGCCGGAAGTCC
 TTGACCACTCAAAATCAGCAACTTTGTATAACATATCAAACTTTCTGAGCAAGTTGTGCTCACTAGCATAAAGCACACTCCAG
 CAGCCCAATGGAGCAGGACCACTTCAAAACTGGTAGAATATTATTTCATATGACAAGGATACCTGAGTAAACTATCCTTTT
 AAAATCACTGGGAACAGAAATTTTATTATCCTATGATGTGAAGCTAAATTAATCTGTGGATCTTTTCTTTTAAATCTATG
 CTCCTTTGGAAATAAAAAAAGTCAGTTTAAATGATTCTCAACTTTTGATTAAATATGTTAGAAAGTTTAAACCTTCAATTG
 AGCTTATTTTCAG⁸¹²⁰² C->T (Thr401Ile) (SEQ ID NO: 31)

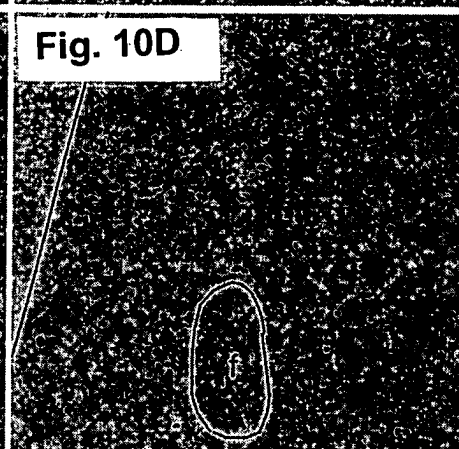
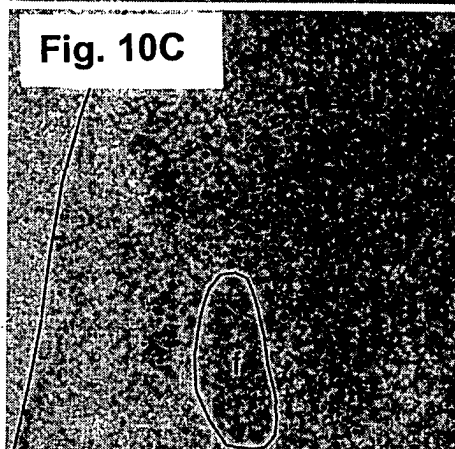
Narcoleptic

Control

Hypocretin



MCH



HLA

